Year 2000
Testing of LAN-based and Oracle Applications

ISD is configuring a test facility for agency Year 2000 testing of Network/LAN-based and Oracle applications.

LAN Testing

Testing of production NetWare servers for Year 2000 compliance in the State of Montana NDS tree will corrupt the NDS database. In the production tree, time can always be moved forward. However, once the NDS, or servers within the NDS tree, have moved forward in time, they cannot be reset backwards because the NDS does not define negative time (moving back in time to current year, date and time). The tree would be required to stop all time allowing real time to catch up with simulated time. It does this by allowing two seconds to pass for each second of time ahead of real time. Therefore, it is imperative that all Year 2000 Network/LAN testing be done in the testing facility provided by the Telecommunications Operations Bureau within ISD.

The testing facility will accommodate the thorough testing environment for exercising the network software and applications. The goal is to provide an environment where Year 2000 application testing can be completed during the normal work day in isolation. It must be noted that this environment will only be set up on a requested basis and will not be considered a permanent environment. It may be disrupted for other testing on an as-needed basis. The following environment is established and available now:

Operating System: Novell Intranetware 4.11 operating system in a test tree simulating the turn of the millennium time frame. State agencies will be at a minimum level of 4.11 or greater by 1999. The operating system has been certified Year 2000 compliant under ISD's criteria. The tree will simulate the current

Year 2000
It's closer than you think!

production tree structure.

Hardware: Two Dell Optiplex Gxi with 133 MHz

INSIDE

Pentium processors, 64 MB RAM, 2 GB Hard Drive, certified to be Year 2000 compliant. Agency servers installed into the test tree must be certified Year 2000 compliant as understood by ISD's criteria.

Software Applications: ISD will install any state standard software for testing on a requested basis. Agencies may request that their in-house developed applications be installed and tested in this environment.

The testing environment is not considered to be a production environment. Live data should not be used and any installed applications should be considered "throw-away" applications. The test environment may be used for testing other than Year 2000 compliance. Therefore, it is strongly recommended that agencies call and schedule their testing to insure that the system is set for the Year 2000 environment.

Oracle Testing

Oracle software is Year 2000 compliant and has been for several years, but application programmers or DBAs may have introduced non-compliant coding techniques within the application that should be tested. ISD will provide a testing environment that will coincide with the LAN Testing Facility for all Oracle application testing. A test server will be attached to the testing LAN and will be using a pre-set futuristic system date. The Oracle server hardware will be limited to a Windows/NT operating system on a dual Pentium class machine with approximately 15GB of disk storage. User desktop

access to the Oracle server will be provided through both IPX/SPX and TCP/IP protocols. Due to resource limitations, system date manipulation, and system coordination requirements, it will be necessary for agencies to schedule application testing. ISD will not be billing the agency for this service.

For more information regarding these test facilities contact:
- LAN testing - Lynne Pizzini 444-4510 (ZIP! or E-Mail at lpizzini@mt.gov)
- Oracle testing - Gary Poepping 444-2811 (ZIP! or E-Mail at gpoepping@mt.gov)

MT PRRIME Is Gathering Momentum
Let's bring you up to date:

"Coming together is a beginning.
Keeping together is progress.
Working together is success."

Calendar of Events

October 3
  9-1-1 Advisory
  9:00 - 11:30 am, Rm 420, Capitol
October 7
  Information Technology Managers Group (ITMG)
  8:30 - 10:30 am, Rm 108, Capitol
October 9 - SPECIAL-
  Information Technology Managers Group (ITMG)
  8:30 - 10:30 am, Rm 111, Metcalf
October 10 - SPECIAL -
  The Information Technology Advisory Council
  (ITAC) 8:30 - 11:30 am, Rm 209 Cogswell Building
October 29
  Information Technology Managers Group (ITMG)
  8:30 - 11:30 am, Rm 111, Metcalf Building
November 5
  Information Technology Managers Group (ITMG)
  8:30-10:30am, Room 111, Metcalf Building

Andersen/PeopleSoft Selection

The Evaluation Team has tentatively selected the Andersen Consulting / PeopleSoft Team to assist in implementing our new core management systems. By October 1, we will have a signed contract! Highlights of our plan include getting the budget module in place by May '98, asset management and accounts receivable by July '98, Human Resources/Payroll by April '99, and a full financial implementation on July 1, 1999.

Project Start-up

The project's official start date will be October 1, 1997. As of that date, team members will no longer be available for regular agency duties as they will be reporting to the project office in Room 106 of the Capitol for an exciting and arduous twenty-month implementation project. In the beginning, we expect a day or two of confusion while everyone gets situated and organized, but our goal is to be on-site and "ready to rumble" when we return from our Lubrecht Forest work session.

Lubrecht Forest Work Session

The project team is scheduled to go to Lubrecht Forest on October 6, 7, and 8 for a work session with our Andersen / PeopleSoft partners. Included on the agenda will be opportunities for us to get acquainted with our teammates, sharing in the creation of a project vision, identifying risks, working through details of the work plan, etc.

Required Reading

Our management team has identified an excellent paper called "How we did it" from a PeopleSoft installation in British Columbia. This document will help tremendously as all team members read how the British Columbia government implemented PeopleSoft on-time and on-budget!

Dave Ashley, our Project Director, recently wrote, "I have to tell you that I am really pleased by our progress to date. The Evaluation Committee did an excellent job selecting Anderson Consulting and PeopleSoft. Dan Mossman, Brian McCullough, Steve Bender and Dal Smilie have done a thorough job negotiating the contract. On September 2nd, we had an informative initial meeting with the Legislative Oversight Committee on State Management Information Systems. And the Steering Committee is in the process of being realigned to better provide guidance during the remainder of the Project. Although the real work is still ahead of us, it looks to me like we've got a really good start to the project and have come a long way towards making this thing a reality."

For more information visit our web site at http://www.mt.gov/doa/mt_prrime.htm, or contact our project office at 444-5700.

Benefits of Voice Mail Technology

Properly applied, voice mail technology will:

- Free the receptionist from the time consuming chore of taking detailed messages. This allows more time to greet callers properly.
- Allow employees to be more responsive to clients needs by allowing clients to leave precise, detailed messages.
- Serve as an individual message center for each employee allowing 24 hour-a-day communications.
- Allow employees to leave detailed messages for other employees without wasting time searching for them or   writing notes.
- Remove the need for employees, family members and other familiar callers to go through the receptionist center by allowing direct access to employee voice mailboxes.
- Provide confidentiality for all messages.
- Allow retrieval of messages from any phone, anywhere, at any time of the day.
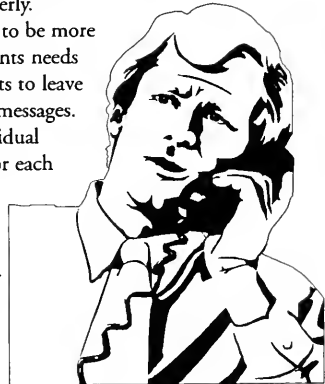
Summary

Voice mail will save time and increase productivity. Next month we'll cover meridian mail courtesy.

For additional information or questions please contact Clara Baer of the Telecommunications Operations Bureau at 444-2455, ZIP! or E-Mail at cbaer@mt.gov

Mainframe News

MVS/QuickRef Upgrading to Version 5.0

MVS/QuickRef will be upgraded to version 5.0 with the installation of the OS/390 Operating System on the state mainframe computer. QuickRef is a "pop-up" reference tool that allows users to access reference information from most panels in ISPF. Information available includes error messages and abend codes, programming language syntax, IBM utilities, JCL syntax, custom information added by ISD, and much more.

To display the MVS/QuickRef Main Menu enter =U.Q on an ISPF command line. However, there are several other access methods that utilize the "pop-up" feature of QuickRef.

■ Entering QW from the command line will display the main menu.

■ (a little faster) Entering QW *item* where *item* is the message number, abend code, JCL statement, etc. that you wish to reference.

■ (even faster) Define 'QWSDSF' to a PF Key. Then, position the cursor on the reference item and hit the defined PF key. If there is no free PF key, type QWSDSF on the command line, position the cursor on the item, and hit *enter* to accomplish the same task.

The QuickRef panel will pop up over the ISPF display whenever QuickRef is accessed with the QW, QW *item*, or QWSDSF methods. PF3 or PF4 will exit QuickRef and back to the original ISPF display. PF3 backs out one QuickRef panel at a time. PF4 does an immediate escape from each "layer" of QuickRef (Referenced items from within a QuickRef definition. Each time an item is referenced within an item, it's a new "layer".) If items are only referenced from the ISPF display, PF4 will immediately go back to that display.

The new version of QuickRef has quite a few changes. Users accustomed to accessing information via the main QuickRef menu, will be affected the most. Previous releases of QuickRef used a two character topic indicator and a 14 character item name. QuickRef now stores

information according to vendor name, product name, product release number, and an item name. Because of this new structure, QuickRef redesigned the way a search is conducted. The main menu now allows a search based on any of the storage keys mentioned above. For example, all messages associated with a certain release of a product can be referenced.

To search for an item through the main menu, select the first option "Request Reference Information", hit enter, and then supply any or all of the following: vendor name, product name, release number, and/or item. Suppling only a vendor name, receives a list of all products supplied by that vendor. From that list select the product. Then look for the item. When the item is already known, supply the item name, leaving the other fields blank. QuickRef will search all the databases selected (see the 'Data Base to Search' field at the bottom of the menu) for the item name.

It is still much easier to access the information through the quick-path methods mentioned above (QW *item*, QWSDSF). But for a custom search, this new main menu method is very helpful.

There is an ISD item in QuickRef called "README" to explain invoking QuickRef and how to set up the PF Key invocation. README also contains information on how to format a detailed search of the data bases. Just enter "QW README" from an ISPF command line.

If you would like more detailed information regarding this new version of QuickRef, contact

■ Glen Stroop of the System Support Bureau at 444-2910, ZIP! or E-Mail at gstroop@mt.gov
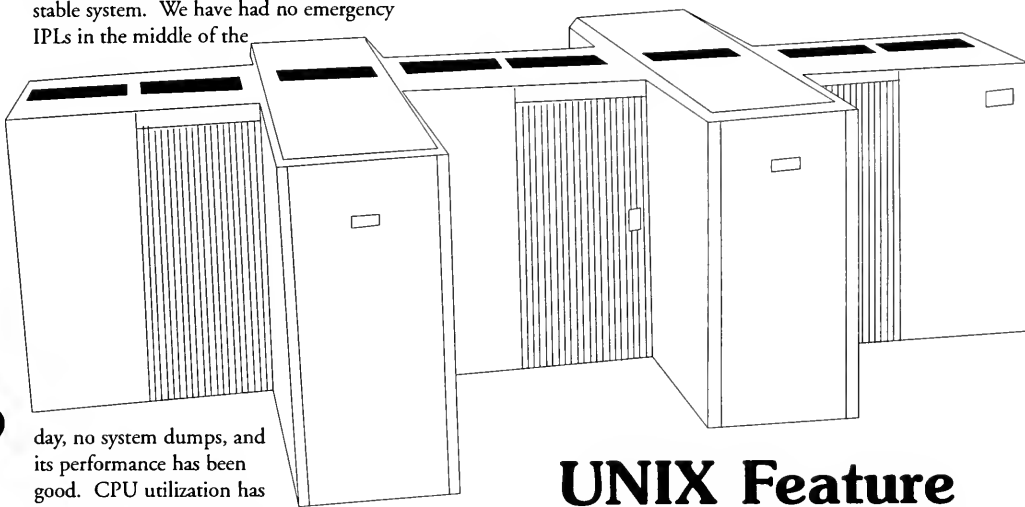■ Bill Ramsay of the Computing Operations Bureau at 444-2902, ZIP! or E-Mail at bramsay@mt.gov

OS/390 Up and Running!

OS/390 went production on the IBM ES9000-832 mainframe on the morning of September 6. That Saturday and Sunday were very quiet, but when Monday morning came things got very busy in Technical Services. Even though we had a free test weekend for our user community in August, some problems could not be

identified until there was a load on the system. There were a few glitches, such as an intermittent invalid sysout count in JCL, minor PAN/ISPF problem, missing BTAM modules, HCF user limit set too low, to name a few, but nothing we couldn't fix. Most problems were resolved by the end of the week. We want to thank our users for their patience that first week. Those users who have worked here a few years, realize that production cut overs to new operating systems always have some adjustments to make. OS/390 is proving to be a very stable system. We have had no emergency IPLs in the middle of the day, no system dumps, and its performance has been good. CPU utilization has hovered around 68%. We can now say that this operating system and all its software is Year 2000 compliant (except for OS/VS COBOL).

There were 56 IBM products delivered with this system, 25 were new products and 12 existing products came in at new release levels. There were also 45 non-IBM products to interface with OS/390. Some of products had to be upgraded to new releases. Whenever possible, we installed the new releases on MVS/ESA 4.3 first to minimize the exposure for the OS/390 install. Products like Syncsort, CA-1, VPS, CL/Supersession, AF/Operator, Listcat Plus (to name a few) were put into production throughout the spring and summer. Several of the new IBM products are already in production on OS/390: DFS/SMS is configured for basic system (which is why you get the message 'NO STORAGE CLASS ASSIGNED' when you allocate a new data set); OpenEdition (see related article); FFST (First Failure Support Technology) are a few examples. You'll be learning more about the others as we begin to implement

them in the next few months. Continue to check the data set SYST.S390.HINTS for tips about the new operating system. For questions about ISPF, try using the HELP function. It is much improved over the last release of ISPF.

If you have any questions about OS/390, please contact Robin Anlian of the Computing Operations Bureau at 444-2898, ZIP! or E-Mail at ranlian@mt.gov

UNIX Feature Available on New OS/390

The new OS/390 operating system installed on the state mainframe computer contains a feature called "OPEN EDITION"(OE). The OE feature is a full function UNIX environment running on the OS/390. This implementation of UNIX functionality has received the UNIX 95 certification and conforms to such standards as X/Open portability 4.2 standard, and XPG4 base profile of the X/Open Company, Ltd. which owns and certifies the UNIX brand. OE contains over 1,100 UNIX programming interfaces included in the above specifications and is also POSIX1 and POSIX2 compliant.

IBM has chosen to implement the "korn" shell for a user command interface to OE. IBM publishes many reference manuals for OE. A few that may be of interest

are *OS/390 OpenEdition User's Guide*, SC28-1891, *OS/390 OpenEdition Command Reference*, SC28-1892, and the *OS/390 OpenEdition Messages and Codes*, SC28-1908.

To access OE you will need an account and user-id on the mainframe. In addition you will need to have an ACF2 OpenEdition segment created to allow access to OE and a home directory on the disk subsystem for any created files.

When we have fully implemented OE on OS/390, there will be several ways to access the OE features. We will be phasing in these features over the next few months starting with the ISPF OMVS shell that can be reached from TSO. This interface will allow you to get a feel for the OE environment, create files on the UNIX file system, access both UNIX files and MVS datasets, and run UNIX programs. There is a C compiler available for those of you that wish to write programs for the OE environment.

The second method of accessing the OE environment will be via Telnet direct to the shell. This will have the look and feel of accessing a native mid-tier UNIX environment such as AIX or DEC/UNIX. We hope to have this available in about a month.

Shortly after implementation of the direct Telnet access, we will implement an X-Windows environment. This will allow X-Window applications to be created and run on the OE platform.

If you have questions about OpenEdition please contact Craig Smith of the Computing Operations Bureau at 444-3458, ZIP! or E-Mail at csmith@mt.gov.

Toll-Free Service
For Netware Connect and WinFrame Users

ISD has added nationwide toll-free service for remote access. Users of Netware Connect and Winframe services can now use (888) 334-7595 when traveling outside the Helena local calling area. The 888 service is included
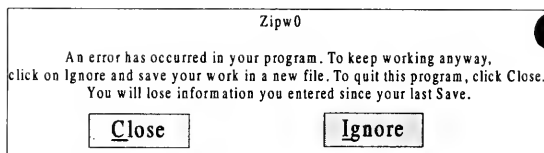
with the current monthly charge for remote access and is for employee use only. ISD is looking into providing additional 800 service for contractors and consultants.

If you have questions about this service contact the Customer Support Center at 444-2000.
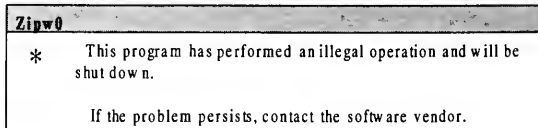
ZIP!Tips
Sending E-Mail Using Shared Lists & Internet Users as Recipients

Since State Government's communication to the outside world has increased dramatically with the capability of sending Internet messages/files, its need to select Shared Lists and Internet users has also become necessary. When sending a message or an attachment, selecting a Shared List from the ZIP! Address Book then clicking on "Switch Address Book", will get the following error:

```
                            Zipw0

        An error has occurred in your program. To keep working anyway,
click on Ignore and save your work in a new file. To quit this program, click Close.
        You will lose information you entered since your last Save.

            [  Close  ]                    [  Ignore  ]
```

If you choose "Close" or "Ignore", you then get the message:

```
Zipw0

  *     This program has performed an illegal operation and will be
        shut down.

        If the problem persists, contact the software vendor.
```

The ZIP!Office program will then close. So, what are your options? Two separate sends?

A work around to this problem is to select the Internet User(s) from the Internet Address Book *before* selecting the Shared List. Create the message to send and attach a file if needed. Click on the "Select Addressee Names" button on the Toolbar then click on the "Switch Address

Tech Talk

Book" button. Choose the name(s) from the Internet Address Book and click on the "Switch Address Book" button to return to the ZIP! Address Book. Select the appropriate Shared List, click on OK and send the mail.

If you have any questions on sending Internet E-Mail or any other ZIP!Office or ZIP!Mail question, contact Sue Skuletich of End-User Systems Support at 444-1392, ZIP! or E-Mail at sskuletich@mt.gov.

ZIP! Address Book

One of the most critical pieces of our state E-Mail system (ZIP!Office, ZIP!Mail and TAO) is the address book. Without it we would all be just a number. Mail would come addressed to RU4007.ZIP003, for example, and your coworkers would have to know your number and ZIP! address rather than your name to send you mail.

That is why having an accurate address book is important to your E-Mail system. The address book is maintained through two processes. First, is the notification process where Agency ZIP! administrators send a notification via E-Mail to ZIP!Office Resources. This notification is sent when the agency gains or loses an employee, or if there is a change to the employees address book record such as a telephone number change or a change of a ZIP! address.

After the change is received, it is entered into an Oracle database. Once all changes for the week have been received (the cutoff is high noon, Thursdays) the database is replicated across the state. This is the second process. Several different communications paths are utilized to distribute the address book and the details of the distribution will not be covered in this article. What you should know about the process is that it happens once a week. **Most** address books are updated somewhere between Thursday afternoons and early Saturday mornings. A few are updated throughout the week.

You can check to see what address book is in place on your server by looking at the first record listed. The record reads !!!AAA ADDRESS ERROR followed by a number in parenthesis (sorry, this does not exist in TAO). The number in parenthesis is the month and day

of the creation of the address book that is loaded on your server. Update any address book older than 60 days. Call the ISD help desk at 444-2000 and they will open a trouble ticket reporting the failure of the update.

If you have any questions about the address book contact Candace Hastings at 444-2858, ZIP! or E-Mail at chastings@mt.gov.

Status Bar Secrets

The **WPWin** status bar is a powerful tool with lots of hidden shortcuts. (The status bar is the line at the bottom of a document window that shows information such as the document number, page, line, and vertical and horizontal position of the insertion point.) Double-clicking different items on the status bar provides many useful tools. Here are just a few:

- Double-click the date displayed on the status bar to insert the current date into a document at the insertion point. Similarly, double-click the time indicator to insert the current time into the document.

- Double-click the CAPS item to toggle Caps Lock on and off or double-click the Insert item to toggle between Insert and Typeover mode.

- Double-click the font indicator to display the Font dialog box or double-click the current printer item to display the Select Printer dialog box.

Tech Talk

WordPerfect

■ Double-click the Position item, which displays the current page, line and position, to bring up the GoTo dialog box.

To customize an item on the status bar, right-click it and choose Preferences. Select the options in the list to add. To remove an item, deselect it from the list or drag it off the status bar. The order of the status bar items can be changed by clicking and dragging them to a new position.

To change the size of an item, move the mouse pointer over the edge of a button until it turns into a horizontal double arrow, then click and drag to resize the button. When finished, choose OK. Then start double-clicking and watch what happens!

Note: To return to the default WordPerfect status bar, right-click the status bar, choose Preferences, click on the Default button, and choose OK.

Portions of this article were reprinted from the April 1997 issue of *WordPerfect for Windows Magazine*.

For more information concerning this article, contact Irvin Vavruska of End User Systems Support at 444-6870, ZIP!, or E-Mail at ivavruska@mt.gov. For questions about WordPerfect, please contact your Network Administrator, WordPerfect's Help Feature, or the ISD Customer Support Center at 444-2000.

Tech Talk

Why It Won't Print

Troubleshooting Printer Problems in CorelDRAW! and Some Strategies to Make Them Go Away

Part 3

Decoding PostScript Errors.

Although the PostScript error has little to do with CorelDRAW!, it can often provide cryptic hints as to why the printer is choking on the data for your drawing. All Windows PostScript drivers feature options for an error handler, which can be activated in Windows 95 from the PostScript tab of the Printers Properties in the Windows Control Panel. In Windows 3.11, select the Setup>Options> Advanced option through the Program Manager>Main Group>Windows Control Panel>Printers icon or through the Setup option in CorelDRAW!'s main Print dialog box.

The PostScript Error Handler is designed to print an error message to the selected printer when printing Fails. These printouts aren't much help unless you know how to interpret them. Here's a quick run-through of the most common printing errors associated with CorelDRAW! files:

Limitcheck. Offending Command=Nametype: EOCLIP
The printer is unable to complete rendering an object due to the complexity of its fill. Try changing the fill of the object to a simple uniform color. When printing color separations, try printing them individually.

Limitcheck. Offending Command=Nametype: EOFILL
The printer is having a problem creating an object's fill due to the complexity of the path composing the
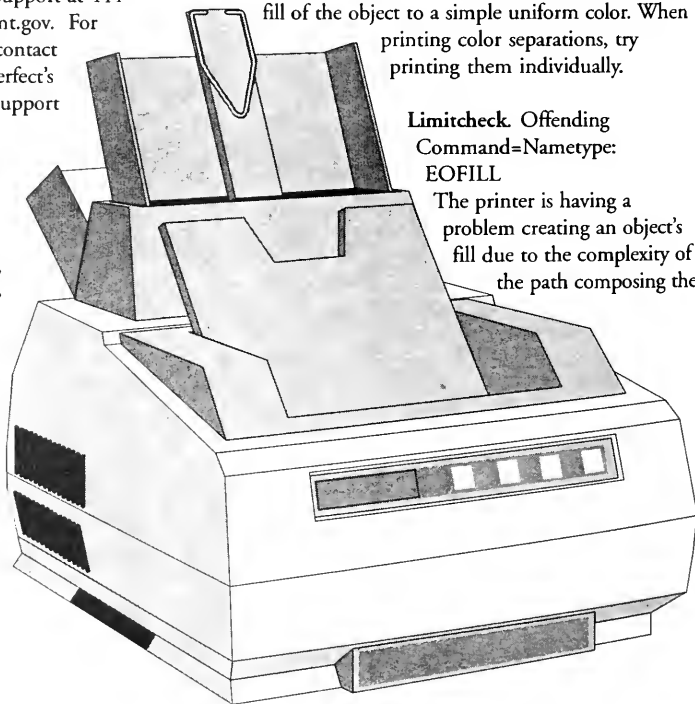
object. Try reducing the complexity of the object using the Auto-Reduce command in the Node Edit roll-up. Or, reduce the printing complexity by lowering the Maximum Number of Points in Curves.

Limitcheck. Offending Command=Nametype: LINETO or CURVETO
This is a case of too many nodes on a curve. Again, try using the Auto-Reduce command in the Node Edit roll-up, or select nodes with the Shape tool and delete them.

Stack Overflow
This is often an indication of embedded Encapsulated PostScript files or overly complex objects or fill patterns exceeding printer stack limits. Try changing the fill of the object to a simple uniform color. When printing color separations, try printing them individually instead of in a group.

Invalid Font
This is the last error message anyone using text wants to see. This error is often associated with printing a file which is using a font file that has somehow become corrupted. The only option is to remove the offending font and reinstall it.

Most information on printing and troubleshooting CorelDRAW! files can be found through Corel's fax-on-demand service at 613-728-0826, extension 3080

Try the following fax-back documents:

CorelDRAW! 5.0

@5006 Switches in the Corel prn.ini File
@5007 Tips for Printing to a PostScript Device
@5011 Tips for Non-PostScript Printing
@5018 Errors Printing to a Network Printer

The faxback directory is also available on Corel's Website at www.corel.com/support/docs/gandp/ivanind.htm#draw7.

The article was adapted from *Corel Magazine*, June 1997 Issue, Trouble Shooting Print Jobs, by Steve Bain.

For more information or questions, contact Jerry Kozak of End User Systems Support at 444-2907, ZIP! or E-Mail at jkozak@mt.gov.

RBase Unsupported
A Respected Product Is Removed from the Supported Software List

RBase will drop off the supported software list as of January 1, 1998. RBase has been on the ISD sunset list for over a year and a half and all support for RBase will cease at the end of this year. Microrim no longer provides support for the older versions of Rbase and a quick search of their web site reveals that only versions 5.0 and 6.0 for Windows are even mentioned or supported. ISD currently provides support up to RBase version 3.1c. There are several sets of manuals for RBase 3.1 and a few back issues of RBase Exchange magazine still available.

For additional questions please contact the ISD Customer Support Center at 444-2000.

HEY, Just SHUT UP!
A Windows 95 Freebie

PC Magazine has made available another Windows 95 free add-on. Its function is really Shutdown, but the product name is SHUT UP. The following are excerpts from the SHUT UP readme file.

SHUT UP allows automated clean-up tasks before shutdown. It can clean out selected history lists, eject CDs, delete the files in the TEMP directory, and run the programs specified before shutting down the computer. It also can provide schedule reminders every day, one day a week, one day a month, or for a specific date any time in the future.

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FREEBIE

Tech Talk

Install SHUT UP by copying its program file to your hard drive. A shortcut to SHUT UP into your StartUp folder is recommended. Uninstalling SHUT UP is done by deleting the program files and ShutUp.ini (found in the same directory). That's it, because SHUT UP makes no Registry entries. SHUT UP is run straight to the System Tray. Right-clicking the SHUT UP icon, reveals a menu with several choices: Shutdown, Configure, Help, About SHUT UP, and Exit. The Configuration dialog provides SHUT UP's options.

There are two ways to shut down a computer when SHUT UP is up and running.

1. Normal Windows Start button's Shut Down.

2. (preferred) Use SHUT UP's Shutdown menu item, accessed by right-clicking the SHUT UP icon in the system tray. This will be a little faster, and allows SHUT UP to conduct the shutdown in a safe and direct manner.

SHUT UP (VERSION 1.00) Copyright © 1997 Ziff-Davis Publishing Company Written by John Deurbrouck First Published in *PC Magazine*, US Edition, September 9, 1997.

To obtain a copy of SHUT UP, copy the files from ISD's Value Added Server at \guest\windows\winaddon\95addons\SHUT UP.

If you don't have access to the VAS or if you have questions regarding this article, contact Denny Knapp of End User Systems Support at 444-2072, ZIP!, or E-Mail at dknapp@mt.gov.

Lotus Approach 3.0

Most Commonly Used Date Calculations

Part 2 of 2 about date calculations in Approach 3.0, part 1 was in the September 1997 issue *News & Views*.

Lotus 123 users probably already know of the 17 built in date calculations available. Approximately 10 of the same functions are available in Lotus Approach. The following 7 examples are commonly used date calculations in Approach 3.0. See last months *News & Views* for more examples.

Common Calculations (Continued):

7. **The number of months between two dates across multiple years:**

This is a variation of the previous formula but assumes that a month has not passed until you have passed the day of the month in which you began the starting date. For example the difference between January 15, 1994, and February 1, 1994, is 0 months because we have not yet reached February 15.
((Month (End_Date) + (12 * (Year(End_Date) - Year(Start_Date))) - Month (Start_Date)) - (If (Day (End_Date) ï Day(Start_Date), 0, 1)))

8. **Calculating age from date of birth:**

Subtract the birthday from today's date to get the difference between the two dates in the number of days. Next, divide by 365.25 (the number of days in a year). This example also accounts for situations where no birthday is entered.

IF(Isblank(BIRTHDAY), '', Trunc(((Today() - BIRTHDAY) / 365.25), 0))

> **NOTE: This formula is accurate to within one day. If a more accurate calculation is necessary, the leap years will need to be accounted for manually.**

9. **The date of the first day of the month:**

The first day of the month can be computed by subtracting 1 less than the day of the month. For example, if today is the 4th of the month, subtracting 3 from today (4 - 1) will return the first day of the month.

Date - (Day(DATE_FIELD) -1)

10. **The date of the last day of the month:**

Calculate the first day of the month following a date and subtract one day. The result will be the last day of the month. The Date function can be used to create a date by specifying the month, day, and year of the date.

APPROACH

The first day of the next month would be the month of the date plus one, unless the month is December (12). Performing modular division of the month +1 yields the month +1 except for December, which yields 1.

The day of the first day of the month is 1.

The year is the same year unless the month of the date is December, in which case the year is year +1. Using this, the last date of a month would be:

Date (Mod(Month(DATE_FIELD), 12) + 1, 1, Year(DATE_FIELD) + If(Month(DATE_FIELD) = 12, 1, 0)) - 1

11. Number of days in the month:

If the day of the last day of a month is calculated, this equals the number of days in the month. Using the results from the previous calculation (Number 10 above), where LastDayOfMonth returns the number of days in the month:

Day(LastDayOfMonth))
otherwise use:
Day (Date (Mod(Month(DATE_FIELD) + 1, 12), 1, Year(DATE_FIELD)+If(Month(DATE_FIELD = 12, 1, 0)) - 1)

12. A date 'n' number of months from today across multiple years:

To find a date a certain number of months (n) in the future, account for the possibility that the beginning date may not have a corresponding date in the target month. For example, 13 months from January 30, 1993 would be February 30, 1994, which does not exist. In the last example, assume it is the last day of the month in February, 1994.

This is accomplished by breaking down the task into separate steps to get the future month, day, and year and then combining them into a date. This creates five separate fields as follows:

FUTURE_MONTH - Use modular division to wrap around the months (i.e. one month after December, which is the 12th month of the year, is January, which is month one).

Mod(Month(DATE_FIELD) + No_Of_Months - 1, 12) + 1

FUTURE_YEAR - For each of the twelve months, add another year to the date plus any wrap into another year (for example, December plus 2 months returns a new year).

Year(STARTDATUM) + If(FUTURE_MONTH = 12, Trunc((Month(STARTDATUM) + MONATE) / 12) - 1, Trunc((Month(STARTDATUM) + MONATE) / 12))

FUTURE_MONTH_DAYS - Determine the number of days in the future month; in case the beginning day is greater than the last day of the month (i.e. January 31 + one month should return the last day of February, not February 31, which is invalid).

If(FUTURE_MONTH = 12, 31, Day(Date(FUTURE_MONTH + 1, 1, FUTURE_YEAR) - 1))

FUTURE_DAY - The lesser of the number of days in the future month and the day number of the current month is the correct day of future month.

IF(Day(DATE_FIELD) < Future_Month_Days, Day(DATE_FIELD), Future_Month_Days)

FUTURE_DATE - Combine the future month, day, and year using the date function to return the future date.

Date(FUTURE_MONTH, FUTURE_DAY, FUTURE_YEAR)

13. Field to calculate if a year is a leap year or not: (General Leap Year information):

every 4 years is a leap year 1992, 1996, etc.
every hundred years is not a leap year 1800, 1900

Tech Talk

every 400 years is a leap year 1600, 2000
returns 1 if leap year, 0 if not
date is a field defined as data type date
To Make a Leap Year Field:
If((Mod(Year(date), 4) = 0 and (Mod(Year(date), 100) <>
0)) or (Mod(Year(date), 400) = 0), 1, 0)

Additional Hints:

Many of these computations are processor intensive. If
modification formulas are attached to the numeric or
date fields involved in the computations, the resultant
values will be updated whenever necessary without the
program having to constantly recalculate them. For a
complete listing of the time and date functions, refer to
the Approach User's Guide.

If you have any questions or need help with this issue,
contact Mike Moller of End User Systems Support at
444-9505, ZIP! Or E-Mail at mmoller@mt.gov.

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New Web Usage Reports for agencies on the ISD Web Server

ISD has installed a reporting system for agencies being
hosted on our web server that allows detailed analysis of
web page usage and trends. The product is called
Marketwave HitList Standard version 3.0 and it works
with the standard or customized log files produced by the
server. We have switched to a customized log file to
gather additional information that HitList uses to create
more meaningful reports. Reports are available by
agency, or as a total for the server and are updated
weekly.

The reports are available as HTML files or text files and
can be E-Mailed to an agency webmaster. Currently we
are using the HTML versions of the files that are
available at:

> http://www.mt.gov/reports/

This directory contains many files but the important
ones are the .htm files such as **complete.htm** which is the
analysis report for all production activity on the server.

Each hosted agency has a set of reports that are created
just for their pages. The two types of reports are a subset
of the **complete.htm** called WebRpt and a path analysis
report. A few categories are duplicated between the
reports but each provides data that is of use by both web
administrators and developers.

The following categories are available in the "WebRpt":

Summary
  Total Requests Per day of Week (graph)
  Most common Visitors
  Most Common Source Sites
Document Detail
  Most Popular Pages
  Most Popular Pages (graph)
  Most Popular Directories
Visit Detail
  Most Popular Entry Pages
  Most Common Exit Pages
  Number of Single Page Visits
  Most Common Single Page Visits
  Average Visits Per Day of Week (graph)
  Average Visits Per Hour (graph)
  Number of Authenticated Users
  Most Common Authenticated Users
Request Detail
  Average Weekly Requests and Visits
  Average Daily Requests and Visits

Tech Talk

Average Requests Per Hour (graph)
Average Requests Per Day of Week (graph)
Source Detail
    Most Common Source URLs
    Most Popular Visitor's Countries
    Most Popular Visitor's Organizations
Client Detail
    Most Popular Browsers
    Most Popular Browsers (graph)
    Most Popular Operating Systems
Technical Detail
    Most Common HTTP Responses
    Most Common HTTP Responses (graph)
    Total Bytes Per Hour (graph)

The following categories are available in the "Paths report"

Summary
Entry and Exit Details
    Most Popular Entry Pages
    Most Common Exit Pages
Single Page Visit Details
    Number of Single Page Visits
    Most Common Single Page Visits
Path Details
    Most Popular Pages
    Jumps Within the Site
    Previous Pages

Currently Available Reports within http://www.mt.gov/ reports by agency:

DOA
    WebRpt_doa.mt.gov.htm
    Paths(doa.mt.gov).htm
Governor's Office
    WebRpt_governor.mt.gov.htm
    Paths(governor.mt.gov).htm
ISD
    WebRpt_isd.mt.gov.htm
    Paths(isd.mt.gov).htm
Legislative Branch
    WebRpt_leg.mt.gov.htm
    Paths(leg.mt.gov).htm
Revenue
    WebRpt_revenue.mt.gov.htm
    Paths(revenue.mt.gov).htm
State Auditor
    WebRpt_sao.mt.gov.htm
    Paths(sao.mt.gov).htm
Sec. Of State
    WebRpt_sos.mt.gov.htm
    Paths(sos.mt.gov).htm
DNRC
    WebRpt_www.dnrc.mt.gov.htm
    Paths(www.dnrc.mt.gov).htm
Prevention Resource Center
    WebRpt_www.prevention.mt.gov.htm
    Paths(www.prevention.mt.gov).htm

The easiest way to access the report for your agency is to bookmark the reports and check them weekly. If there is any interest in creating monthly reports ISD could also create a monthly report for each agency.

If you have questions about these reports or about the ISD Web Hosting services in general, please contact Ron Armstrong of the Systems Support Bureau at 444-2905, ZIP! or E-Mail at rarmstrong@mt.gov.

Training Calendar

This schedule has been assembled by the Helena College of Technology of The University of Montana. If you have any questions about enrollment, please call 444-6821. All classes will be held at the Helena College of Technology at 1115 N. Roberts. Please note that these costs are subject to change each July 1st.

To enroll in a class, you must send or deadhead an enrollment application to the State Training Center, HCT, Helena, MT 59601. If you have questions about enrollment, please call 444-6821. *Once you enroll in a class, the full fee will be charged UNLESS you cancel at least three business days before the first day of class.* HCT is also willing to schedule specific classes by request from state agencies.

The Helena College of Technology makes reasonable accommodations for any disability that may interfere with a person's ability to participate in training. Persons needing an accommodation must notify the college no later than two weeks before the date of training to allow adequate time to make needed arrangements. To make your request known, call 444-6821.

Training News

Training News

		DATES	COST	LENGTH
Data Base	Intro. to Oracle Prereq. Intro to Windows	To be in January	170.00	2
	Intro. to SQL Prereq. Intro to Oracle	To be in January	170.00	2
	Oracle Developer 2000, part I Prereq. Intro to Oracle & SQL	October 1 - 8 (am)	0.00	3
	PL/SQL **Changed Date** Prereq. Intro to Oracle & SQL	October 14 - 17 (am)	170.00	2
	Oracle Developer 2000, part II Prereq. Oracle Dev. I & PL/SQL	October 22 - 29 (am)	0.00	3
	Oracle Designer Prereq. Oracle Dev. I; PL/SQL recommended	November 10 - 21(am)	0.00	5
	Lotus Approach Prereq Intro to Windows	October 8 November 10 December 11	85.00	1
	Inter. Lotus Approach Prereq. Lotus Approach	October 15 November 21 December 16	85.00	1
Data Network/ Mainframe	NetWare 4.x Administration	October 6 - 17 (pm)	425.00**	5
	TSO/SPF	November 5	85.00	1
	JCL	November 12 - 13	170.00	2
	ADS/O	November 18 - 20	255.00	3
Microcomputer	Introduction to Windows 3.1	October 1 December 1	85.00	1
	Windows 95 Conv. Prereq. familiar with Windows	September 30 (am) December 3 (am)	42.50	.5
	Windows 95	November 4	85.00	1
	Intro. to Internet Prereq. Intro to Windows 3.1 or 95	October 21 (am) November 14 (am)	42.50	.5
	Internet Prereq. Intro to Windows 3.1 or 95	December 17 -18	170.00	2
	HTML Prereq. Intro to Windows & familiar with Internet	November 24 - 25	170.00	2
	WordPerfect 6.1 for Windows Prereq. Intro to Windows 3.1 or 95	November 6 - 7	170.00	2
	WordPerfect 6.1 Conv. Windows Prereq. Intro to Windows 3.1 or 95	October 14 December 9	85.00	1
	WP 6.1 Macros Prereq. WP 6.1 course	October 20	85.00	1
	WordPerfect 8.0 Conversion -NEW- Prereq. Intro to Windows 95	October 10 (am)	42.50	.5
	Lotus for Windows Prereq. Intro to Windows 3.1 or 95	October 6 - 7	170.00	2
	Lotus Conv. To Windows Prereq. Intro to Windows 3.1 or 95	December 10	85.00	1
	Lotus Macros **Changed Date** Prereq. Lotus course	October 16	85.00	1
	Lotus Advanced Formulas -NEW- Prereq. Lotus course	October 28 - 29	170.00	2

**Plus material costs.   Prerequisites may be met with consent of Instructor.

ISD Class Enrollment Application

COMPLETE THIS APPLICATION <u>IN FULL</u> **AND RETURN**
IT <u>AT LEAST ONE WEEK PRIOR</u> **TO THE FIRST DAY OF CLASS**

COURSE DATA

Course Request: _____

Date Offered: _____

STUDENT DATA

Name: _____

Soc. Sec. Number (for P/P/P):   _____

Agency & Division: _____

Mailing Address: _____

_____

Phone: _____

How have you met the required prerequisites for this course? Explain, giving the class(es) taken,
tutorial completed, and/or experience.

_____

_____

_____

BILLING INFORMATION/AUTHORIZATION <u>MANDATORY</u>

User ID: _ _ _ _ _ _   Agency#: _ _ _ _

Authorized Signature: _____

FULL CLASS FEE WILL BE BILLED TO THE REGISTRANT UNLESS
CANCELLATION IS MADE THREE BUSINESS DAYS BEFORE
THE START DATE OF THE CLASS.

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HELENA COLLEGE OF TECHNOLOGY
OF THE UNIVERSITY OF MONTANA
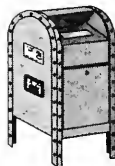## PHONE 444-6800   FAX 444-6892

Enrollment Application

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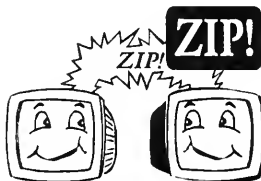
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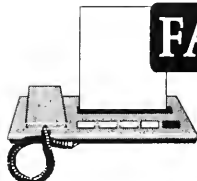
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Editor
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